

## ABSTRACT

According to various aspects of the invention, a transducer is manufactured by providing a substrate assembly, making major element cuts in the substrate assembly in a first direction, making minor element cuts in the substrate assembly in a second direction, positioning a plurality of signal lines (such as a flex circuit) on the substrate assembly such that the plurality of signal lines is aligned with said minor element cuts, and making major element cuts in the substrate assembly in the second direction after said plurality of signal lines is positioned.

Various aspects of the invention also include a multi-dimensional transducer having a plurality of elements, wherein the transducer includes a conductor; a piezo-electric assembly assembled with said conductor and having a first plurality of cuts in a first direction; and

a matching layer assembly having a second plurality of aperture cuts in the first direction, wherein the matching layer is coupled to the conductor opposite the piezo-electric assembly such that the first and second pluralities of elevation cuts are aligned to isolate the plurality of elements in an elevation dimension.